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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/648,517

08/27/2003

Sanghyun Joo

122988-05005249

3977

43569 7590 05/02/2007  
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EXAMINER

KIM, CHONG R

ART UNIT

PAPER NUMBER

2624

MAIL DATE

DELIVERY MODE

05/02/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/648,517

Applicant(s)

JOO ET AL.

Examiner

Charles Kim

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 01 March 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☒ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 15-21 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-14 is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 August 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 8/27/03
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Restriction Requirement***

1. Applicants' election without traverse of Species A, claims 1-14, in the reply filed on March 1, 2007 is acknowledged. Claims 15-21 are withdrawn from further consideration by the Examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

### ***Quayle Action***

2. This application is in condition for allowance except for the following formal matters:

### ***Drawings***

3. The drawings are objected to because it appears that the first instance of  $LL_1'$  in steps 205 and 206 of figure 2 was intended to read  $LL_1$ . Also, it appears that  $LL'$  in step 209 was intended to read  $LL_1'$ . Appropriate correction is required.

### ***Claim Objections***

4. Claims 1, 3, 4, 8-12, 14 are objected to because of the following informalities:

Claim 1 is objected to because the phrase "where the second wavelet image composed of" in line 10 is grammatically incorrect. It appears that the Applicants intended the phrase to read "where the second wavelet image is composed of." Appropriate correction is required.

Claim 1 is further objected to because the phrases "minimizing a size change of the user information embedding region" in lines 27-28, and "reset the user information embedding

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region” in line 29, render the claim ambiguous. In particular, it is unclear which *user information embedding region* (user information embedding region of the first wavelet image or the new user information embedding region of the user information embedded image) is being claimed. In light of page 12, line 7 of Applicants’ specification, it appears that the “user information embedding region” in both instances is the user information embedding region of the first wavelet image. Appropriate correction is required.

Claim 3 is objected to because the phrase “where a difference value between the *user information* and the *user information* is smallest” renders the claim ambiguous. In particular, it is unclear how a difference exists between two equivalent forms of (user) information. In view of the previous recitation, “arranges difference values between the user information embedding region and the new user information embedding region” in lines 2-4, it appears that Applicants intended the phrase to read “where a difference value between the user information embedding region and the new user information embedding region is smallest.” Appropriate correction is required.

Claim 4 is objected to because the inconsistencies between “user information-embedding region” and “user information embedding region” render the claim ambiguous. Applicants are suggested to maintain consistency in their claim language to overcome this ambiguity.

Claim 4 is further objected to because the phrase “resetting the user information embedding region” in lines 20-21 renders the claim ambiguous. In particular, it is unclear which user information embedding region (in the first wavelet image or in the user information embedded image) is being claimed. It appears that Applicants intended the phrase to read “resetting the user information embedding region in the first wavelet image,” as suggested on

page 11, lines 24-26 of Applicants' specification. The Examiner notes that similar objections apply to claims 8-12 and 14, where the phrase "the user information embedding region" renders the claims ambiguous because it is unclear which user information embedding region (in the first wavelet image or in the user information embedded image) is being claimed. Appropriate corrections are required.

***Citation of Pertinent Prior Art***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. Joo et al., U.S. Patent Application Publication 2003/0095682 discloses a similar fingerprinting technique except that the user information is embedded to positions where a difference value between a user information embedding region  $LL_n$  and a new user information embedding region  $LL_n'$  is large (paragraph 32).

b. Joo et al., U.S. Patent Application Publication 2003/0099373 discloses a similar fingerprinting technique except that user information is embedded under the condition where there is a difference between a user information embedding region  $LL$  and a new user information embedding region  $LL'$  corresponding to a predetermined interval factor INTERVAL (paragraph 42).

c. Hayashi et al., U.S. Patent No. 6,535,616 discloses a fingerprinting technique that embeds user information in the lower sub-bands of a wavelet transformed image.

***Reasons for Allowance***

6. The following is an Examiner's statement of reasons for allowance: the essential difference from the prior art is embedding the user information to positions where a difference value between the user information embedding region and the new user information region is small. These features in combination with the other elements of the claim and the base claim are not disclosed or suggested by the prior art of record.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Conclusion***

7. Prosecution on the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

A shortened statutory period for reply to this action is set to expire **TWO MONTHS** from the mailing date of this letter.

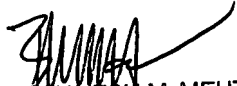
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles Kim whose telephone number is 571-272-7421. The examiner can normally be reached on Mon thru Thurs 8:30am to 6pm and alternating Fri 9:30am to 6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on 571-272-7453. The fax phone number for the organization where this application or proceeding is assigned is 571-272-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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